

VERSION WITH MARKINGS TO SHOW CHANGES MADE

1 7. (Amended) A process for underfilling an integrated circuit that is mounted to a
2 substrate, comprising:
3 dispensing a first [underfill] material acting as underfill which becomes attached to the
4 integrated circuit and the substrate; and,
5 dispensing a second [underfill] material [which becomes attached to the integrated circuit
6 and the substrate] acting as underfill, the second material having a lower adhesive property than
7 the first material.

1 8. (Twice Amended) The process as recited in claim [11], wherein the first
2 [underfill] material flows between the integrated circuit and the substrate.

1 9. (Twice Amended) The process as recited in claim 8, wherein the substrate moves
2 within an oven while the first [underfill] material flows between the integrated circuit and the
3 substrate.

1 10. (Twice Amended) The process as recited in claim [11], wherein the second
2 [underfill] material is dispensed in a pattern which surrounds the first [underfill] material.

1 11. (Twice Amended) A process for underfilling an integrated circuit that is mounted
2 to a substrate comprising:
3 heating the substrate before a first [underfill] material is dispensed;
4 dispensing the first [underfill] material [which becomes] acting as underfill, the first
5 material becoming attached to the integrated circuit and the substrate; and,

6 dispensing a second [underfill] material [which become] acting as a circumferential fillet,
7 the second material having a lower adhesion property than the first material and becoming
8 attached to the integrated circuit and the substrate.

1 12. (Twice Amended) The process as recited in claim 11, further comprising heating
2 the first [underfill] material to a [partial] gel state.

1 13. (Twice Amended) The process as recited in claim 12, wherein the substrate is
2 heated to a temperature that is greater than a temperature for heating said first [underfill] material
3 to said partially gel state.

1 14. (Twice Amended) The process as recited in claim 11, further comprising
2 mounting the integrated circuit to the substrate with a solder bump before the first [underfill]
3 material is dispensed.

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1 26. (New) An integrated circuit package comprising:

2 a substrate;

3 an integrated circuit attached to the substrate;

4 a first material placed between the substrate and the integrated circuit as underfill; and

5 a second material placed around edges of the integrated circuit and the first material to act

6 as a circumferential fillet, the second material having a lower adhesion property than the first
7 material.

1 27. (New) The integrated circuit of claim 26, wherein the second material is an

2 anhydride epoxy.

1 28. (New) The integrated circuit of claim 26, wherein the substrate is baked at a

2 temperature greater than a temperature at which the first and second materials are applied.

1 29. (New) The integrated circuit of claim 26, wherein the second material seals the

2 first material.

- 1 30 (New) The integrated circuit of claim 26, wherein the second material is applied
- 2 at a temperature less than a temperature at which the first material is applied.

APPENDIX A

Shin-Etsu**Shin-Etsu Chemical Co., Ltd.**

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Fax sending form		April 16, 2002	
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Semicoat" product data

Dear Sir


Please receive the requested information of "Semicoat" product.

I have enclosed the requested product data and general information of "Semicoat".

5230JP is underfill and 122X is fillet forming material.

Best Regards,

Yamakawa

 PAP. NO. 8 ATTACHMENT

Shin-Etsu**Product data sheet**

Grade		SEMICOATS230JP	SEMICOAT122X
Feature		Exceptional good moisture resistance to prevent the delamination	Fillet forming to reinforce crack-resistance
Filler content	wt%	67.5	78.0
Filler Size (Max/Mean.)	micron	48/7	80/12
ITEM		Black	Black
Appearance		Black	Black
Viscosity : 25C	Pb.s	280.0	35.0
Gelation Time : 145C	sec	410	63 at 150C
Flow Distance : 120C	mm	28	-
Specific Gravity		1.72	1.82
Glass Transition Temp.	C	140	155
CTE 1	ppm/C	25	15
CTE 2	ppm/C	76	65
Flexural Strength	N/mm ²	98	118
Flexural Modulus	N/mm ²	8200	12000
Volume resistivity : 25C	TQ m	more than 10	more than 10
Dielectric constant at 1KHz		3.7	3.5
Cure condition		120C*0.5hrs+150C*2hrs	120C*0.5hrs+150C*2hrs
Condition (Device temp.)		110-120C	-
Storage condition		below -40C	below -40C

Shin-Etsu Chemical Co.,Ltd.

SEMICOAT Series

Liquid Epoxy Materials for Electronic Devices